

Tank Designer Christie Alienated the Russians, Too

Dear Sir:

To Dr. Charles M. Baily's recent and most interesting article in *ARMOR* regarding "Tank Myths," I would also like to add my years of frustrations over the ongoing confusion regarding J. Walter Christie and his tanks, especially with respect to his suspension system. A few additional comments, however, are warranted.

As noted, Christie was more interested in speed than armor and armament. I.A. Khalepskii, head of the Directorate for Mechanization and Motorization of the Red Army, made two trips to the United States. In April 1930, he witnessed Christie sign a contract for two tank chassis, which were shipped to the Soviet Union as farm tractors late in December. Khalepskii was only interested in Christie's helically-wound coil springs acting independently on each large road wheel because this system had the potential to meet operational mobility for the emerging doctrine of deep operations that require tanks with speed and maneuverability. At the time, this vehicle could move over rough ground at greater speeds than any tank then in existence. Under his direction, the BT (fast tank) series was developed and continued to be upgraded, which led to the famous T34.

Meanwhile, the Chief of Ordnance was not at all happy over Christie's duplicity and his flashy public tank demonstrations. While the Chief of Ordnance was trying to negotiate with Christie, the obstinate designer preferred instead to deal with Poland and the Soviet Union, a country not recognized by the United States. Furthermore, Christie's rigid insistence over the type of tank he thought was necessary for the U.S. Army made a suitable agreement nearly impossible. In June 1931 at one of the negotiations to purchase, Christie warned Ordnance officers responsible for procuring and testing tanks that he would bring to bear political pressures. At that heated meeting, he also stated he had spies in all Army branches that kept him posted on tank developments.

A year later, after the Army purchased seven Christies, the designer so threatened the Ordnance Department over their use of his patents that he was paid \$100,000 in 1920 for present and future use by the U.S. government. Christie claimed he and only he knew how to build tanks and would make trouble for any competing company. The stubborn Christie would not accept military requirements, disregarding the effect added weight of armor, armaments, and crew would have on the tank. By now, Ordnance was very disgusted and refused to further deal with the recalcitrant designer. Khalepskii also found Christie impossible. With two Christie chassis, Khalepskii had all he needed to exploit Christie's suspension system for a

massive tank program. By 1936, the Red Army had the largest tank fleet in the world.

In 1985, *Steel Steeds Christie* was published. Written by his son, J. Edward, the book was a sorry, self-serving memoir loaded with emotional bias that attempted to alter history. (See *ARMOR*, November-December 1986, page 3) Nevertheless, the book added to the Christie myth. A recent example also contributing to the Christie aura is Belton Cooper's *Death Traps*. (See page 21) Cooper was an Ordnance officer who served in the 3rd Armored Division during World War II. He called Christy (sic) a brilliant tank designer who developed the torsion bar suspension system. He chastised the U.S. military for a lack of interest. In fact, it was the Ordnance Department that developed the torsion bar suspension for Army tanks during World War II and retained this type of system until the termination of the M60 series. Cooper erroneously claimed that the helicoil system, rather than the volute-bogie suspension, was used in the M4s. How could an Ordnance officer with so much experience confuse tank suspension systems?

Why is basic research so difficult? How hard is it to determine that torsion bars installed horizontally across the tanks' underside would not compromise the vehicle dimensions, its width, and fighting space? This system was light and offered higher levels of performance. Whereas, Christie tanks employed side-mounted, long helical springs that compromised the hull space for the crew and fighting compartment. This arrangement became critical as tank turrets and armaments grew bigger. Understanding differences between tank suspensions is paramount when developing tactics and doctrine.

I totally agree with Dr. Baily that those interested in writing about armor history need to look at the wide-ranging primary sources, especially those dealing with J. Walter Christie, his tanks, and his relationship with the U.S. Army and the Ordnance Department. In addition, there are numerous articles, including those published in *ARMOR*, that offer the armor historian numerous references on the Christie subject.

Again, I wish to commend Dr. Baily on his excellent article.

GEORGE F. HOFMANN, PH.D.
History Professor
University of Cincinnati

Real Secrets at Kubinka Museum Were the Soviet Tank Prototypes

Dear Sir:

I read with interest the article by Jim Warford on the Kubinka armor museum in the

September-October 2001 issue. Having visited the facility several times, maybe I can clear up some of the mysteries. Although the museum became official in 1972, it in fact existed as a collection since the end of World War II. As in the case of the comparable U.S. facility, the Ordnance Museum at Aberdeen Proving Ground, the collection lost many of its exhibits over the years due to a lack of interest in preservation and many rare vehicles were scrapped. Its establishment as a formal museum in 1972 was in part an effort to stabilize the collection for training purposes.

The museum has not been as secret as the article would suggest. Its existence has been known among tank history specialists since the 1970s, and I published photos from the collection almost twenty years ago in some of my tank history books. What was secret was the collection's post-war Soviet armored vehicles. When I first visited the museum in 1991, I was not at all surprised by the vehicles in the foreign AFV halls, having already seen photos of most of them. What was so thrilling was to see the many unknown Soviet developmental vehicles that had previously never been revealed.

One of the statements in the article is not correct. There are not 290 foreign AFVs in the collection. There are (approximately) 290 AFVs in the collection including the foreign examples. Of the seven display halls, Hall 5 covers British and U.S. AFVs, Hall 6 covers World War II German AFVs, and Hall 7 covers other foreign AFVs. The other four halls are devoted to Soviet designs.

The reason for the relative lack of photos of the American vehicles is due in part to the difficulty of photographing the collection. The museum is located on a closed military base, and access is difficult. Efforts to build a public access road to avoid this problem have faltered due to a lack of funding. Visits to the museum are at the whim of the curator and/or base commander. Even after being granted access, the use of cameras is nearly always restricted to some extent or another. On one occasion, I was allowed to use my camera for thirty minutes; on another occasion, about an hour; sometimes no cameras are allowed. Even when permission to use cameras is given, it is technically difficult to take good photos due to the lighting conditions in the hall.

Under these difficult circumstances I can assure you, that given the choice to photograph an M113 or an unknown Soviet prototype tank, I chose the latter. Most of the U.S. vehicles in the collection are well known types from World War II Lend Lease sources, and the post-war U.S. AFVs are very few in number and relatively well known among tank history specialists. Indeed, the

Russian armor history magazine, *Tankomaster*, has been running a series of articles on the foreign tanks in the collection, based on archival material from the Soviet trials of the vehicles at Kubinka. For readers interested in seeing photos of the U.S. vehicles in the collection, they were included in the published Russian catalog of the collection, and in the book by Michael Cecil, *Kubinka: The Russian Museum of Armoured Vehicles*, published in Australia in 1992.

Nearly all of the post-war U.S. vehicles came from vehicles captured in Korea or Vietnam. The reason for the lingering mystery about remaining American vehicles has more to do with a lack of interest than due to any secrecy. Try finding out where some of the Soviet vehicles in U.S. collections originated! It's the same problem. The museum is handed a vehicle from the technical exploitation office with no data on its origin, and soon myths and legends encrust the real story. An example is the M41 light tank at Kubinka. Some Russians state it is an ARVN vehicle from Vietnam, while others say that it is one of the Bay of Pigs tanks. I have photos of many of the U.S. vehicles at Kubinka but haven't bothered to publish them as no one has ever shown much interest.

Regarding the mystery halls at Kubinka, there is really not much mystery about them. Hall 8 is an empty demonstration hall, and the exhibits there vary. It is sometimes closed off to foreigners as it is occasionally used to put on displays of new Russian equipment for visiting dignitaries. The last time I was in it, there was a display of vehicles that were being offered for export for visiting foreign delegations in the Moscow area. Hall 9 is a work area and shelter for incomplete vehicles, and access is usually not allowed as the hall is usually a mess. For anyone interested in its contents, a good selection of photos is available in Fraser Gray's book, *Secret Kubinka*, published in the U.K. in 1998. One location not mentioned in Jim Warford's article is the "elephant's graveyard" at Kubinka. This is simply an open field where several dozen tanks are dumped. This includes a number of unique Soviet-era tank prototypes. Access to this area is generally restricted if only for shame at the poor state of the vehicles. The Russians have great pride in their tank history and like to show it in the best light, not as a field of rusting hulks.

The real secret museums in Russia are the design bureau museums. The Uralvagonzavod plant in Nizhni Tagil has one, as does the other surviving plant at Omsk. I have seen TV footage inside the Nizhni Tagil museum, but it is generally off limits to foreigners except to some customers of Russian defense products.

For readers traveling to Russia who want to visit the Kubinka museum, some travel agents in Moscow can arrange a trip, but access is very erratic. Nevertheless, there

are interesting AFV exhibits at the Central Armed Forces Museum in Moscow, the Artillery and Engineer Museum in St. Petersburg, and the Poklonna Gora Memorial museum on the outskirts of Moscow, to say nothing of the many regional museums. An invaluable guide for tank buffs traveling around Russia is Trevor Larkum's and Jim Kinnear's *Preserved Tanks in Russia* published in the U.K. in 1997, which lists nearly 600 preserved AFVs and their location, including all of the known Kubinka exhibits.

STEVE ZALOGA

Scout Leader Seeks Help On 40mm Grenade Training

Dear Sir:

I am a scout platoon leader and found the article on light cavalry gunnery very interesting. I recently tried to implement a full light cavalry gunnery program to include Tables I-X. Due to STRAC we were not allocated the full amount of 40mm ammunition; we had to pull an IRF trump card to get it. We proceeded with the tables, all to standard, and came to the conclusion that the MK 19 tables were unrealistic. We had a normal train-up to gunnery, including SGST. The tables do not seem to reflect time of flight and are very short on time. They consider the MK 19 a point weapon when it should be an area weapon. If this is the case, we should get the ammo to do this correctly. A nasty rumor circulating in my unit and others says that several Bradley master gunners were rounded up, put on TDY, and given a week to come up with these tables.

My only question is, is anyone experiencing these difficulties? If they are, what are their solutions? I qualified all five 50 cal. trucks first run and only 1 MK 19 truck first run. Has anyone done this or anything similar? I am only able to use FM 17-12-8 as a guideline. Please help.

1LT JAMES FUNKHOUSER
Scout Platoon Leader, 2-63 AR

There's No Substitute For a Live Fire TTVIII

Dear Sir:

I wish to comment on Dr. Hagman's proposal for reduced TTVIII based upon projected qualifications after as few as two engagements. I am not sure it is a tool we need. The basis of my training philosophy is the belief that if all else fails, 14 well-trained, lethal crews will be able to achieve the majority of missions given to them. A full TTVIII is critical to training lethal crews for several reasons.

First, it requires the crew to demonstrate several competencies that are not ade-

quately tested in virtual training. For example, there is no adequate virtual trainer for the .50 caliber machine gun. A reduced gunnery of only two engagements would not verify that the crew possesses the important tasks/habits of correctly boresighting before the day and night runs, or that they conduct MRS updates as needed. TTVIII tests the entire crew, not just the TC and gunner; a slow loader or a jerky driver do not exist in the virtual world. The mix of target arrays and conditions represented in TTVIII is therefore a very important reason — we need to evaluate crews under all of those conditions, not just the first few!

Second, for those of us who will go to war on our training equipment, TTVIII is the best means of building crew confidence. I dare anyone to deny the importance of soldier confidence. I wager that those who do will not be the ones on the battle position when the bullets start flying.

Most importantly, TTVIII is an important part of a tank crew's psychology. I believe that the title of "Top Gun" is the BEST way of building esprit. Nothing else, not APFT scores, not DUI-free days, not maneuver victories over sister units, will build unit pride faster than a successful gunnery. This goes far beyond mere bragging rights. You can't fool soldiers. They intuitively know that a successful TTVIII run is the best means of measuring proficiency in the fundamental task of a tank unit, *killing the enemy under a variety of conditions*. Any modification to TTVIII other than making it more difficult and realistic will have disastrous effects upon morale.

Training individual crews to hit and kill the enemy is our most important task and it cannot be done adequately with simulation alone. If we divert resources to other collective tasks from TTVIII we are undermining the basis for victory with misguided priorities. Dr. Hagman's ideas have merit and could be applied in other areas. Under resource constraints they might be applied to TTVII with some modifications. I think under extreme time constraints they might have a place in TTVIII. It is more likely that they would be useful to mechanized infantry or cavalry units when vehicle lethality is not the paramount skill to be trained.

I do not mean to say that TTXII, other forms of live-fire exercise, or force-on-force maneuver training are not important. Like crew gunnery, they cannot be adequately trained without actual field time; however, the basis of all these training events is a lethal crew with confidence in themselves and their equipment. In short, the basis for what we do is TTVIII. If forced to divert resources, I would take from these other events to ensure a quality TTVIII — never the other way around.

J.P. CLARK
CPT, Armor
D/2-72 AR